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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/664,065

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EXAMINER

WELLS, NIKITA

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/664,065	<b>Applicant(s)</b> KOSHELEV ET AL.	
	<b>Examiner</b> Nikita Wells	<b>Art Unit</b> 2881	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>03/19/07, 04/11/06</u> | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claim 1-18, and 25-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Bijkerk et al. (6,452,194 B2).

With respect to claims 1-4, 6-7, and 27, Bijkerk et al. disclose (Abstract; Figs. 2, 3; Col. 3, lines 33-52; Col. 6, lines 58-67; and Col. 8, line 47 to Col. 9, line 2) a radiation source comprising an anode and a cathode that are configured and arranged to create a discharge, within a discharge element, in a substance in a discharge space between said anode and said cathode to form a plasma so as to generate electromagnetic radiation, said radiation source comprising a plurality of discharge elements. With respect to claim 6, said radiation source comprises a triggering device (Fig. 4; 150) configured to initiate said discharge by irradiating a surface proximate said discharge space with an energetic beam.

With respect to claim 5, Bijkerk et al. disclose (Abstract; Col. 3, lines 33-52) a radiation source comprising an anode and a cathode that are configured and arranged to create a discharge, wherein each discharge element is brought in contact with a liquid before initiating a discharge in said element so as to cover internal surfaces of said element with said liquid.

With respect to claim 8, Bijkerk et al. disclose (Col. 2, lines 54-66) a radiation source, wherein said energetic beam could be a laser beam.

With respect to claims 9 and 28-31, Bijkerk et al. disclose (Col. 8, lines 28-46) a radiation source, wherein said energetic beam could be charged particle beam (claim 9 - Col. 8, lines 44-46) and wherein material for discharge is provided by evaporation at the site of a cathode spot and wherein said initial discharge is initiated by irradiating a surface proximate said discharge space with an energetic beam.

With respect to claim 10-13, Bijkerk et al. disclose (Col. 7, line 66 to Col. 8, line 8) a radiation source, wherein said energetic beam irradiates an area on the surface of an anode or cathode or target structure adjacent to a emission aperture and the discharge area.

With respect to claims 14, 25, and 26, Bijkerk et al. disclose (Col. 3, lines 53-60, and Col. 8, lines 47-59) a radiation source, wherein the target material comprises an element selected from the group consisting of: xenon (Xe), tin (Sn), lithium (Li), indium (In) and iridium (Ir).

With respect to claims 15-18, Bijkerk et al. disclose (Fig. 4; Col. 8, lines 28-51) a radiation source, wherein said target structure forms part of said cathode, anode, and uses an insulator between anode and cathode.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bijkerk et al. (6,452,194 B2) in view of Melnychuk et al. (6,815,700 B2),

With respect to claim 19-24, Bijkerk et al. disclose (as shown in Section #2) a radiation source comprising an anode and a cathode that are configured and arranged to create a discharge. Bijkerk et al. fail to specifically disclose that the surface irradiated by the energy beam comprises a wicking structure configured to transport a liquid towards said discharge space from a liquid reservoir in contact with said wicking structure.

However, Melnychuk et al. (6,815,700 B2) disclose (Col.15, lines 54-55; and Col.19, lines 31-35) a plasma focus light source with a wicking structure configured to transport a liquid towards said discharge space from a liquid reservoir in contact with said wicking structure.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize and substitute the plasma focus light source of Melnychuk et al. into the radiation source of Bijkerk et al. in order to generate intense electromagnetic radiation from a discharge in a substance creating a plasma in a space between an anode and a cathode.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Borisov et al. (6,414,438 B1), Koshelev et al. (7,208,746 B2), and Zukavishvili et al. (6,933,510 B2), disclose a radiation source based on a discharge creating a plasma between an anode and a cathode.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikita Wells whose telephone number is (571) 272-2484. The examiner can normally be reached on 8:30 AM - 5:00 PM. If attempts to reach the examiner by

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telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The central fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nikita Wells, Primary Examiner

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September 12, 2007